University Medical Centre, Rotterdam, The Netherlands; Margreet C. Vos, Department of Medical Microbiology and Infectious Diseases, Erasmus MC University Medical Centre

Background: In the Erasmus MC University Medical Center, Rotterdam, the Netherlands, patients considered at risk for carrying highly resistant microorganisms (HRMO) are placed in isolation on admission, until tested negative for HRMO (ie, targeted screening). Patients without risk factors are not routinely screened (ie, nontargeted screening). However, nontargeted screening could identify patients colonized with HRMO missed by targeted screening. To determine the additional value of nontargeted screening, we compared the outcomes of the nontargeted screening approach with all available clinical cultures. **Objective:** We aim to identify patients colonized with HRMO, but missed by targeted screening, and to determine whether non-targeted screening has additional value. **Methods:** For the MOVE study, nontargeted admission and discharge cultures (nose and perianal) were obtained from randomly selected patients admitted to specific wards, regardless of HRMO risk factors. This study was part of a research initiative to identify the relation of a contaminated environment with the risk of becoming infected or colonized on a patient level. All bacteriological clinical samples positive for at least 1 HRMO from January 1, 2018, until August 31, 2019, were compared with the nontargeted screening samples. Samples were screened for methicillin-susceptible *Staphylococcus aureus* (MSSA) and methicillin-resistant *Staphylococcus aureus* (MRSA) as well as highly resistant *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *Enterococcus faecium*, and Enterobacteriales. Broth enrichment was used for all cultures. **Results:** During the study period, 50,653 patients were admitted. 706 patients (1%) had a clinical sample positive for at least 1 HRMO during their hospital stay. 936 (1.8%) patients were included in the nontargeted screening for the MOVE study, and 40 patients were found to have at least 1 culture positive for HRMO (4.3%). Among these 40 patients, 28 were positive at admission and 12 were positive at discharge. Extended-spectrum β-lactamase (ESBL)–producing Enterobacteriales were most prevalent (n = 36, 90.0%) both at admission and discharge (n = 26 and n = 10, respectively). At admission, 1 patient was identified with MRSA and 1 patient was positive for vancomycin-resistant *E. faecium* (VRE). At discharge, 1 patient was identified with VRE and 1 had Verona Integron-encoded Metallo-β-lactamase (VIM)–positive *P. aeruginosa*. **Conclusions:** Our results show that the current targeted screening does not identify all HRMO carriers. Furthermore, patients who acquire an HRMO during admission are missed. The nontargeted screening identified 40 unknown carriers (4.3%). The limitations of the study are the restricted number of sample sites and the fact that we were unable to culture all patients. Therefore, it is likely that our study shows an underestimation of the true number of patients with HRMO.

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Poster Presentation

Variability and Trends in Blood Culture Utilization, US Hospitals, 2012–2017

Kelly Hatfield, Centers for Disease Control and Prevention; Natalie McCarthy, Centers for Disease Control and Prevention; Sujan Reddy, Centers for Disease Control and Prevention; James Baggs, Centers for Disease Control and Prevention; Lauren Epstein, Centers for Disease Control and Prevention; Sophia Kazakova, Centers for Disease Control and Prevention; Babatunde Olubajo, Centers for Disease Control and Prevention; Hannah Wolford, Centers for Disease Control and Prevention; John Jernigan, Centers for Disease Control and Prevention

Background: Microbiology data are utilized to quantify epidemiology and trends in pathogens, antimicrobial resistance, and bloodstream infections. Understanding variability and trends in rates of hospital-level blood culture utilization may be important for interpreting these findings. Methods: We used clinical microbiology results and discharge data to identify monthly blood

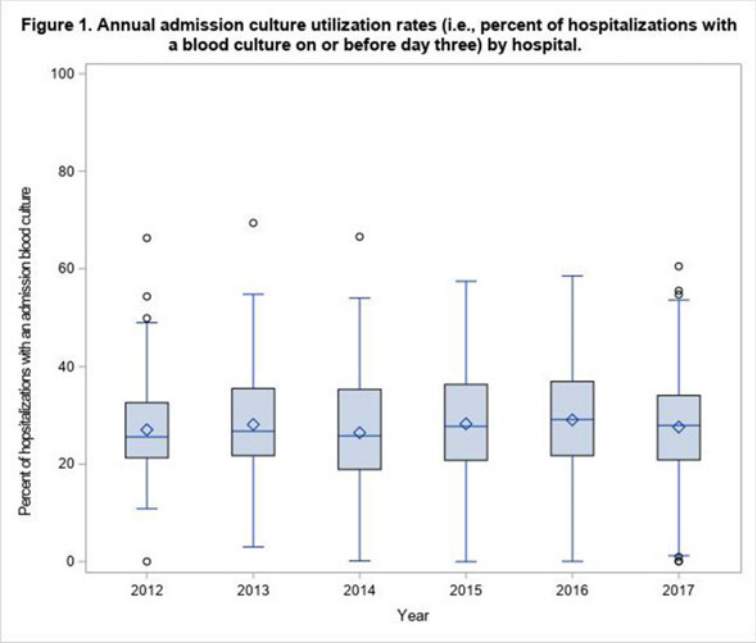

Fig. 1.

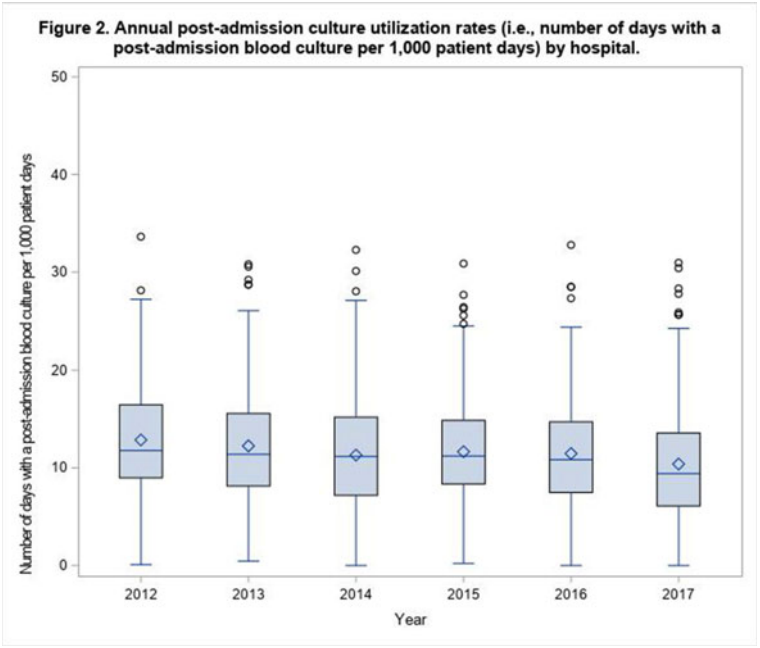

Fig. 2.

culture rates from US hospitals participating in the Premier Healthcare Database during 2012–2017. We included all discharges from months where a hospital reported at least 1 blood culture with microbiology and antimicrobial susceptibility results. Blood cultures drawn on or before day 3 were defined as admission cultures (ACs); blood cultures collected after day 3 were defined as a postadmission cultures (PACs). The AC rate was defined as the proportion of all hospitalizations with an AC. The PAC rate was defined as the number of days with a PAC among all patient days. Generalized estimating equation regression models that accounted for hospital-level clustering with an exchangeable correlation matrix were used to measure associations of monthly rates with hospital bed size, teaching status, urban–rural designation, region, month, and year. The AC rates were modeled using logistic regression, and the PAC rates were modeled using a Poisson distribution. Results: We included 11.7 million hospitalizations from 259 hospitals, accounting for nearly 52 million patient days. The median annual hospital-level AC rate was 27.1%, with interhospital variation ranging from 21.1% (quartile 1) to 35.2% (quartile 3) (Fig. 1). Multivariable models revealed no significant trends over time ($P = .74$), but statistically significant associations between AC rates with month ($P < .001$) and region ($P = .003$), associations with teaching status ($P = .063$), and urban-rural designation ($P = .083$) approached statistical significance. There was no association with bed size ($P = .38$). The median annual hospital-level PAC rate was 11.1 per 1,000 patient days, and interhospital variability ranged from 7.6 (quartile 1) to 15.2 (quartile 3) (Fig. 2). Multivariable models of PAC rates showed no significant trends over time ($P = .12$). We found associations between PAC rates with month ($P = .016$), bed size ($P = .030$), and teaching status ($P = .040$). PAC rates were not associated with urban–rural designation ($P = .52$) or region ($P = .29$). Conclusions: Blood culture utilization rates in this large cohort of hospitals were unchanged between 2012 and 2017, though substantial interhospital variability was detected. Although both AC and PAC rates vary by time of year and potentially by teaching status, AC rates vary by geographic characteristics whereas PAC rates vary by bed size. These factors are important to consider when comparing rates of bloodstream infections by hospital.

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Verification of Healthcare Personnel Immunity as a Strategy for Measles Preparedness

Rachael Snyders, BJC HealthCare; Hilary Babcock, Washington University School of Medicine; Christopher Blank, BJC HealthCare

Background: Immunization resistance is fueling a resurgence of vaccine-preventable diseases in the United States, where several large measles outbreaks and 1,282 measles cases were reported in 2019. Concern about these measles outbreaks prompted a large healthcare organization to develop a preparedness plan to limit healthcare-associated transmission. Verification of employee rubeola immunity and immunization when necessary was prioritized because of transmission risk to nonimmune employees and role of the healthcare personnel in responding to measles cases. **Methods:** The organization employs ~31,000 people in diverse settings. A multidisciplinary team was formed by infection prevention, infectious diseases, occupational health, and nursing departments to develop the preparedness plan. Immunity was monitored using a centralized database. Employees without evidence of immunity were asked to provide proof of vaccination, defined by the CDC as 2 appropriately timed doses of rubeola-containing vaccine, or laboratory confirmation of immunity. Employees were given 30 days to provide documentation or to obtain a titer at the organization's expense. Staff with negative titers were given 2 weeks to coordinate with the occupational heath department for vaccination. Requests for medical or religious accommodations were evaluated by occupational heath staff, the occupational heath medical director, and the human resources department. All employees were included, though patient-